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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/815,632	03/23/2001	Steven M. Burgarella	111453.128	4639

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EXAMINER

CROSS, LATOYA I

ART UNIT PAPER NUMBER

1743

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/815,632

Applicant(s)

BURGARELLA ET AL.

Examiner

LaToya I. Cross

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4,5 and 7-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5 and 7-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

This Office Action is in response to Applicants' amendments filed on June 15, 2005. Claims 1, 2, 4, 5 and 7-18 are pending.

#### *Claim Rejections - 35 USC § 103*

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 2, 4, 5, and 7-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,101,946 to Martinsky in view of US Patent 4,080,607 to Van Breeman et al and US Patent 5,615,958 to Furrow et al.

Martinsky disclose a microarray spotting instrument. The spotting instrument comprises a printhead and a mounting assembly. The mounting assembly comprises two mounting holes disposed on either side of the printhead. The printhead is of the pin-type, whereby pins for spotting liquid onto a substrate are mounted within the printhead, as recited in claims 4 and 5. The pins are conventionally used with arrays of wells, such as the 96-well plate or the 384-well plate, wherein the wells are separated from one another by 9.0mm or 4.5mm, respectively, as recited in claims 17 and 18 (col. 8, lines 4-12).

Martinsky differ from the instant application in that there is no teaching of the bracket and semi-kinematic mounting system as claimed.

Van Breeman et al teach a printing head assembly comprising a printing head, a bracket assembly and a mounting assembly. The printhead (40) is described in terms of two part – an upper part (41) and a lower part (42). The upper part (41) is considered to be equivalent to Applicants' claimed

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bracket because Van Breeman et al describes the upper part has containing the fluidics package of the printhead. As a mounting assembly to mount the bracket (upper part 41) to the printhead (lower part 42), Van Breeman et al teach using three ball mounts (48, 49 and 50), as recited in claims 3 and 15. The ball mounts are located between the bracket and the printhead and are positioned in a semi-kinematic shape (V-shape), as shown in figure 19. The ball mounts (48-50) have corresponding ball rests (45-47) to allow the printhead to be mounted to the bracket. Van Breeman et al explain that this assembly provides extremely accurate, easily mated, 3-point interface between the printhead and the bracket (col. 4, lines 17-24). Screws (84) engage the ball mount (49), as recited in claim 9. Mounting fitting (44) provides a positioning structure and impact absorber (51) controls the positioning of the bracket onto the printhead, as recited in claims 10 and 11. With respect to the positional repeatability error recited in claims 7, 8 and 12-14, Van Breeman et al recognize the need to be able to reassembly the printhead assembly accurately and easily. The reference further states that the use of a ball mounting assembly provides "extremely" accurate, easily mated reassembly.

Regarding the use of dowel pins, neither Martinsky nor Van Breeman teach such. Van Breeman teaches using "rests" to mate with the ball mounts.

However, it is conventionally known that balls mounts using dowel pins can be used in place of ball mounts using channels and grooves. Furrow et al teach a printhead assembly, wherein instead of notched surfaces, pins (136) mate with the ball mounts (col. 6, lines 31-58).

Recognizing the disadvantages of mounting systems in microarray spotters such as described in Martinsky, it would have been obvious to one of ordinary skill in the art to modify Martinsky by using the printhead assembly of Van Breeman et al because the Van Breeman et al printhead assembly is disclosed as provide accurate reassembly of the printhead after cleaning or refurbishing. Further, it would have been obvious to substitute the channels in the printhead of Van Breeman for dowel pins, as

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disclosed by Furrow et al. In using the printhead of Van Breeman et al, an improved device would result that will allow an unskilled user to reassemble the printhead assembly.

Therefore, for the reasons set forth above, Applicants' claimed invention is deemed to be obvious, within the meaning of 35 USC 103 in view of the teachings of Martinsky, Van Breeman et al and Furrow et al.

### *Response to Arguments*

3. Applicant's arguments filed June 15, 2005 have been fully considered but they are not persuasive. With respect to the obviousness rejection over Martinsky, Van Breeman et al and Furrow et al, Applicants argue that neither reference teaches hardened dowel pins. In response, the Examiner points out that Applicants admit that Van Breeman et al teaches using plastic material for the housing where the ball make contact. The balls are made of hard material, such as metal. While Van Breeman et al may not specifically disclose that the housing is made of "hardened" plastic, such would have been obvious to one of ordinary skill in the art. The printhead device of Martinsky and Van Breeman et al operates by the ball (hardened metal) contacting the ball rests (made of plastic). One of ordinary skill in the art would have recognized that the rests should be of sufficient hardness to withstand the impact of the metal balls. Van Breeman et al's use of the term plastic does not teach against using a hardened material, such as hardened plastic. Surely such would have been obvious to one of ordinary skill in the art as using a soft plastic would not allow the device to withstand metal impact and would cause the device to not function in its intended manner. Applicants' incorporation of "hardened" dowel pins is insufficient to overcome the teachings of the prior art.

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4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaToya I. Cross whose telephone number is 571-272-1256. The examiner can normally be reached on Monday-Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**MONIQUE T. COLE**  
**PRIMARY EXAMINER**